Department
for Environment
Food & Rural Affairs

UK Agricultural Market Monitoring Group: impacts of prolonged wet weather

July 2024

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Contents

Foreword

1. The UK Agriculture Market Monitoring Group (UKAMMG) reviews and analyses market information from government and industry, including prices, production and trade for the main agricultural sectors in the UK. It provides advice to senior officials and ministers on market developments and provides a forum for the discussion of market impacts across the UK. UKAMMG comprises representatives from Defra, DAERA (Department of Agriculture, Environment and Rural Affairs in Northern Ireland), Scottish Government and Welsh Government.

2. This analysis was prepared for consideration and discussion at the UKAMMG meetings of Tuesday 14 May and Tuesday 11 June. Assumptions and projections are a reflection of scenario assumptions and data available at the time, especially the AHDB Early Bird Survey. The paper does not take into account or reflect any changes in the market situation since the paper was prepared. UKAMMG is aware that updates to the AHDB Early Bird Survey have been made that suggest that projected impacts may not be as severe as initially modelled. Additionally, actual harvest data will begin to emerge from mid-August, meaning that UKAMMG will not update this analysis.

Executive summary

3. The UKAMMG met on 16 April 2024 to consider the impacts of the recent and prolonged wet weather experienced by many parts of the UK. It considered how the prolonged wet weather had impacted UK arable, horticulture and livestock sectors. The reported impacts include late/limited planting opportunities for arable and horticulture crops; delayed turn out of grazing animals and the associated risk of diseases in keeping animals housed indoors for longer periods than usual, concerns about the potential scarcity and cost of straw; and a build-up of slurry and reduced application opportunities. It was noted that impacts on overall yields and productivity will vary depending on region, area and, in the case of the arable sector, crop and soil type amongst other factors.

4. This paper is part of the wider analysis of market impacts undertaken by UKAMMG and should therefore be considered alongside UKAMMG data reports and meeting notes that are regularly published on GOV.UK. The analysis in this paper was conducted from April to June to assess the potential impact of recent and prolonged wet weather on UK agriculture in response to the AHDB Early Bird Survey (March 2024). The Early Bird Survey (EBS) takes place each autumn to assess national cropping intentions. AHDB re-ran this survey in March 2024 to give insight into the potential cropped areas for harvest in 2024. This survey includes returns up to and including 13 March 2024. The continued wet weather in March may have hampered spring planting plans. Farmers intended to plant

more spring crops, but the prolonged wet weather might have delayed fields drying out in time to drill, forcing them to adjust their planting plans.

5. The AHDB Early Bird Survey suggested changes in the planted area of different commodities will vary for harvest 2024. It suggested feed wheat would see an estimated decrease in planted area of −15%, rapeseed −28%, and winter barley a decrease of −22%, while spring barley is estimated to increase by 29% and oats are set to rise by 26%. Overall, planting is forecast to be roughly in line with previous years, with only a modest increase in fallow land.

6. It is important to acknowledge that some of the land designated for spring crops might have been used for environmental purposes or alternative crops (e.g., spring beans, peas, and potatoes). Not all the reduction in planted area will represent an absolute loss.

Methodology

7. A combination of historical case studies and future projections have been utilised to examine how prolonged wet weather can impact prices, production, and market dynamics. The model used for this analysis is the United Kingdom Agricultural Market Model (UKAMM)[1]. UKAMM is a dynamic, recursive partial-equilibrium model of the UK agricultural sector.

8. Like most similar partial-equilibrium models, UKAMM does not formally include weather as a variable in the model. The shock applied to UKAMM therefore reflects off-model assumptions which been made around the impact of wet weather on key agricultural market variables such as crop areas[2] and yields[3].

9. To select the case studies used in this analysis we used historical rainfall data from the Met Office and Defra yield data to find years with prolonged wet weather events comparable to the one that occurred between October 2023 and March 2024. We focused on years with lower yields, choosing 2001 and 2020 as case studies due to their similarity in rainfall patterns and yield impacts both in these years and the preceding months. The case studies are used as historical benchmarks to make comparisons against the projections produced by the United Kingdom Agricultural Market Model (UKAMM).

[1] Despite similarities in the names, UKAMM the model is not directly attached to the UK Agricultural Market Monitoring Group (UKAMMG) but is Defra's primary model for agricultural market analysis. Full documentation of the model can be found here: https://assets.publishing.service.gov.uk/media/602b92a8e90e07055b9d3259/modelling-agriculture-in-the-uk.pdf

[2] Compared to 2023, 2024 crop areas in UKAMM are reduced in line with the 2023 to 2024 year-on-year changes in the AHDB Early Bird Survey (March 2024). For the major crops, these are as follows - wheat: -15%; barley: +9%; oats: +26% and oilseed rape: -28%

[3] Arable yields in 2024 are assumed to be the realised average of the two most recent years in which we have experienced excess rainfall and yield declines (2020 and 2001)

Current view of the situation

Projections for domestic production, prices, and market response.

10. The UKAMM projected changes in UK arable production in 2024 are based on AHDB Early Bird Survey (March 2024) cropped area estimates and Defra assumed arable yields in 2024. The projections indicate potential for a 42% decrease in rapeseed production, a 22% decrease in wheat production, a 1% decrease in barley production, and a 15% increase in oat production.

11. For the 3 major crops (wheat, barley, and rapeseed) the largest changes, by some way, are projected in wheat and oilseed rapeseed. As a result, these sectors are the focus of the modelling results for the arable sector.

12. Domestic wheat prices are projected by UKAMM to increase by 14%, with total domestic wheat consumption projected to fall by 3% in response. Using feed wheat price data since 2009, a 14% price rise is well within observed fluctuations in annual wheat prices and should not be considered as especially unusual. Lower domestic production of wheat is largely borne by the trade balance rather than domestic prices, with imports projected to increase by 114% and exports projected to fall by 36%.

13. Milling wheat varieties are more susceptible to quality degradation during periods of prolonged wet weather. Off-model adjustments to the trade balance are more pronounced, and increased imports are necessary to maintain supply chain continuity.

14. UKAMM projects domestic rapeseed prices to increase by 12%, with total domestic rapeseed consumption projected to fall by 4% in response. Similarly for rapeseed, the projected reduction in production is reflected primarily in the trade balance, with imports projected to rise by 55% and exports to fall by 41%.

15. The trade balance adjustments projected by UKAMM are comparable with historical observations from the 2001 and 2020 case studies. We observed a rise in imports for wheat, barley, oats, and rapeseed from the preceding years. On the other hand, exports generally fell except for oat and rapeseed exports, which increased in 2001 and in 2020, respectively. Annual prices generally increased within observed fluctuations, except for feed oat prices, which fell in 2001, along with milling oat and malting barley prices, which fell in 2020.

16. The domestic livestock and arable sectors are linked via the feed demand system. The projected change in the feed cost index in UKAMM is circa 5%. This has a very small negative impact on intensive livestock production of poultry and

pigmeat (circa −1%) and an even smaller negative impact on raw milk production (circa −0.5%). When a 5% reduction in the lamb crop was assumed, the UKAMM model estimated a fall in total UK production (−5%) with a small projected increase of sheepmeat farm-gate prices (+2%). Impacts on beef production and prices are projected to be negligible.

17. Overall, the wet weather impacts on prices in other sectors are estimated to be negligible or minor. The impact on the value of UK agricultural production overall is projected to be modest.

Current market prices and latest crop development report (May 2024)

18. In May, prices were up year-on-year by 6% for UK feed wheat and 14% for Paris Rapeseed, whilst prices were down year-on-year by 1% for barley and 53% for milling oats. Prices were below the five-year rolling average (between –2% and −6%) for UK feed wheat, feed barley, and Paris Rapeseed. Milling oats prices were above the five-year rolling average (+52%).

19. As a result of the tightening of straw supplies, prices for the week ending 30 June 2024, are £97/t, 47% above the five-year rolling average for big square baled barley straw and £90/t, 53% above the five-year rolling average for wheat straw. However, there is regional disparity, with the lowest prices observed in the east and prices at their highest in the southwest. Big square baled barley straw and wheat straw prices range from £80/t and £70/t respectively in the east to £125/t and £120/t in the southwest.[4]

20. The International Grain Council (IGC) grain market report for June suggests that global total grain production is forecast to expand by 1% in 2023/24, to 2,300Mt.[5] Production of key grains is projected to be robust in 2024/25, and there should be sufficient global supply to meet domestic demand despite an increase in global consumption and modest declines in projected domestic production.[6]

21. AHDB reports in their Arable crop development report (May 2024) that winter crops are growing well in most regions, with the majority stronger than last month. Spring crop conditions are generally good or excellent. However, drilling delays may have reduced yield potential, and some regions were unable to finish drilling, resulting in a larger fallow area this year.[7]

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[4] Hay and straw average merchant buying prices, British Hay and Straw Merchants' Association, 2024
[5] Mt= million tons
[6] June IGC Grain Market Report, International grain council, 27 June 2024
[7] Arable crop report; AHDB, 7th June 2024

Ongoing monitoring

22. We do not expect to update this paper, but the UK Agricultural Market Monitoring Group (UKAMMG) will continue to monitor the situation, including through:
    - Engaging with key stakeholders in the agricultural industry
    - Continued monthly reviews of key agricultural prices to track price trends and assessing potential impacts on the market arising from the wet weather.
    - Review of yield, and production statistics
        - AHDB Harvest reports will be available from July 2024 - September 2024.
        - Official Defra production levels or planting areas estimates will be available from August 2024.
        - Official Defra yield statistics from harvest results will be available from October 2024.